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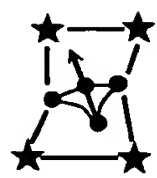
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January 13, 2004
Total 5 pages
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FTP C-106
D-70546 Stuttgart
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Re: Japanese Patent Application No. 2000-591343
"BREMSEINHEIT"
Your ref.: P030034/JP/1
Our ref.: DC01-13

Dear Mr. Brückner,

We have received a first office action from the Japanese Patent Office. The due date for reply is **March 2, 2004** which can, upon application, be extended by three months, i.e. June 2, 2004. The reasons for rejecting the application are the followings:

Reasons

1. The invention in the claims listed below of the subject application should not be granted a patent under the provision of Patent Law Section 29(2) since it could have easily been made by persons who have common knowledge in the technical field to which the invention pertains, on the basis of the invention described in the publications listed below which were distributed in Japan or foreign countries prior to the filing of the subject application.

Claims 1, 3, 4, 10-13, 15 and 16

Document a: Japanese utility model unexamined publication No. 04-7739

Document b: Japanese utility model unexamined publication No. 03-

46026

Document c: JP62-124244A

In the invention described in the cited document a, several pistons are provided per brake pad, thereby the application force of each piston is adjusted so that the pressure acts essentially uniformly on the friction surface. Additionally, in the invention described in the cited document b, two brake pads are provided per caliper, and in the invention described in the cited document c, brake disc has a friction surface composed of a metal/ceramic composite material.

In regards to "the friction linings of the brake shoes cover at least 15% of the friction surface of the brake disc rotor", the explanation of a critical meaning of the numerical value is not described in the description, therefore it is a matter of design choice.

It does not have constitutional difficulty to provide several pistons to each pad (as described in the cited document a) and to combine with a brake disk (as described in the cited document c) with providing several brake pads to the caliper (as described in the cited document b).

2. The present application does not comply with the requirements under Patent Law Section 36(4).

(2d) In regard to "electronic compensation elements", it is unclear what it is like since a concrete constructional explanation is not described.

(2e) The concrete explanation of "a way that the pressure acting on the brake shoes is as uniform as possible, in particular for operating friction coefficients of about 0.40 to 0.45" is not described.

In view of this, the detailed description of the invention of the present application is not described such a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art.

3. The present application does not comply with the requirements under Patent Law Section 36(6)(i).

(3f) "The ratio of the mean height (h) to the mean width (b) of each friction

lining of a brake shoe is approximately 1:1 to 1:1.6" described in claim 2 differs from "Die Reibfläche 21a ist also radial eher gros, in Umfangsrichtung jedoch vergleichsweise klein (on page 6 lines 24-25 in original text) or the drawings shown in Fig.2, 3 or 5.

In view of this, the invention described in claim 2 of the present application does not correspond to the detailed description of the invention.

4. The present application does not comply with requirements under Patent Law Section 36(6)(ii).

(4g) In claim 8, 9, "over 1 μm /bar brake fluid pressure" are ambiguous.

(4h) In claim 1 and otherwise, the interaction between "application device", "piston" and "caliper" is unclear.

In view of this, the invention described in claims 1 to 16 of the present application is unclear.

•Remark

For the claims other than the claim specified in this notification of reason for refusal, no reason for refusal is found at present. If any reason for refusal is found later, it will be notified.

Our Comments

For your reference, we are enclosing each copy of the cited documents a and b together with their abridgements and copy of the cited document c with together with the copy of Patent Abstracts of Japan.

The differences between claim 1 and a combination of documents a-c appear to be as follows:

Difference 1: at least two application device (30) are provided in claim 1 while only one application device or caliper is disclosed in documents a and b.

Difference 2: the friction linings (21a, 21b) of the brake shoes (20a, 20b) cover at least 15% of the friction surface (12a, 12b) of the brake disc rotor (11) in claim 1 while such a covering rate is not disclosed in documents

a to c.

As for difference 2, the examiner asserts that value of 15% is merely a matter of design choice. If the above differences provide advantageous effects, there may be a possibility to traverse the rejection without any substantial amendment, however, if they do not, we recommend combining claim 1 with any of the claims not rejected by reason of inventive step, such as claims 2, 5-9 and 14.

Regarding the reason (2d), please confirm whether "electronic compensation element" is explained or not in the original description. We guess that the example of using a plurality of friction linings using the principle of balanced levers can be covered by "mechanical compensation element". Thus, "electronic compensation element" should be deleted from claim 5.

Regarding the reason (2e), we recommend amending claim 6 as follows:

6. Brake unit according to one of the preceding claims, characterized in that the at least two pistons (31, 32) are arranged for operating friction coefficients of about 0.40 to 0.45.

Regarding the reason (3f), please confirm whether $b:h=1:1$ to $1:1.6$ or $h:b=1:1$ to $1:1.6$.

Regarding the reason (4g), please let us know correct unit of brake fluid pressure.

Regarding the reason (4h), the term of "caliper" appears to be usually used for application device of the present invention, therefore, the examiner pointed out that the interaction between "application device", "piston" and "caliper" is unclear. We guess that "piston caliper (Kolbensattel)" in this description means like a pair of pistons facing each other and that the application device includes one or more pair of pistons. If it is correct, we will explain the difference between the application device, piston and caliper.

If you have any other suggestion, please let us know, together with any advantageous effects which are derived from the construction of the invention

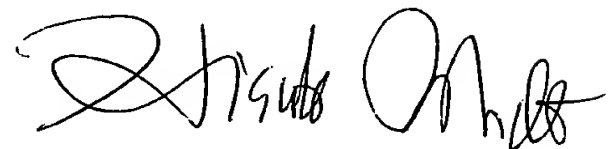
Messrs. Daimler Chrysler AG
2004/01/13
Page 5

but which are not derived from the documents.

The due date for reply is **March 2, 2004** which can, upon application, be extended by three months, i.e. June 2, 2004.

We are looking forward to receiving your instruction well before the due date.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Hisako Ishido', with a stylized, cursive script.

Hisako Ishido

c.c. DaimlerChrysler Japan Holding, Ltd.
Intellectual Property Management

拒絶理由通知書

特許出願の番号	特願2000-591343
起案日	平成15年11月18日
特許庁審査官	豊原 邦雄 8107 3W00
特許出願人代理人	石戸 久子（外 3名） 様
適用条文	第29条第2項、第36条

この出願は、次の理由によって拒絶をすべきものである。これについて意見があれば、この通知書の発送の日から3か月以内に意見書を提出して下さい。

理 由

1. この出願の下記の請求項に係る発明は、その出願前日本国内又は外国において頒布された下記の刊行物に記載された発明に基いて、その出願前にその発明の属する技術の分野における通常の知識を有する者が容易に発明をすることができたものであるから、特許法第29条第2項の規定により特許を受けることができない。

記 (引用文献等については引用文献等一覧参照)

- ・請求項 1, 3, 4, 10, 11, 12, 13, 15, 16
- ・引用文献等 a, b, c
- ・備考

文献aにはブレーキパッドごとに複数のピストンを設け、摩擦表面の圧力が基本的に均一になるように各ピストンの圧着力が調整されたものが記載されており、文献bにはキャリパごとに2つのブレーキパッドが設けられたものが記載され、文献cには金属／セラミック複合材料で構成される摩擦表面をもつブレーキディスクが記載されている。

ブレーキパッドのライニングがブレーキディスクの摩擦表面の少なくとも15%を覆うことについては、その数値の臨界的な意義の説明はなされておらず、当業者が適宜選定し得る設計事項というべきである。

文献a記載のものにおいて、文献b記載のようにキャリパに複数のブレーキパッドを設けたうえで、各パッドに複数のピストンを設けること、及び、文献c記載のようなブレーキディスクと組み合わせること、に構成上の困難性はない。

2. この出願は、発明の詳細な説明の記載が下記の点で、特許法第36条第4項

に規定する要件を満たしていない。

記

- d. 「電子的補償エレメント」について、構成の具体的な説明がなく、どのようなものなのか、不明である。
- e. 作動摩擦係数が 0. 4 0 ～ 0. 4 5 のときに、パッドに作用する圧力を均一化する方法が具体的に説明されていない。

よって、この出願の発明の詳細な説明は、当業者が請求項 5, 6 に係る発明を実施することができる程度に明確かつ十分に記載されていない。

- 3. この出願は、特許請求の範囲の記載が下記の点で、特許法第 3 6 条第 6 項第 1 号に規定する要件を満たしていない。

記

- f. 請求項 2 記載の、 $h : b$ が $1 : 1 \sim 1 : 1. 6$ であるパッドは、段落【0019】にいう、「半径方向に大きい、周方向には比較的小さくなる」、あるいは図 2, 3, 5 に示されるものと異なる。

よって、請求項 2 に係る発明は、発明の詳細な説明に記載したものでない。

- 4. この出願は、特許請求の範囲の記載が下記の点で、特許法第 3 6 条第 6 項第 2 号に規定する要件を満たしていない。

記

- g. 請求項 8, 9 において、「ブレーキ液圧が $1 \mu m / b a r$ を超える」は意味不明である。
- h. 請求項 1 その他において、「圧着装置」、「ピストン」、「キャリパ」の相互関係が不明瞭である。

よって、請求項 1 ～ 1 6 に係る発明は明確でない。

この拒絶理由通知書中で指摘した請求項以外の請求項に係る発明については、現時点では拒絶すべき理由を発見しない。拒絶の理由が新たに発見された場合には、改めて拒絶の理由が通知される。

引用文献等一覧

- a. 実願平 2 - 4 8 6 9 8 号 (実開平 4 - 7 7 3 9 号) の

マイクロフィルム

- b. 実願平 1-106751 号（実開平 3-46026 号）の
マイクロフィルム
- c. 特開昭 62-124244 号公報

先行技術文献調査結果の記録

- ・調査した分野 I P C 第 7 版 F 1 6 D 6 5 / 0 2
 D B 名
- ・先行技術文献 実開昭 63-54572 号公報
 特開平 10-231870 号公報
 特開昭 55-24270 号公報
 特開平 5-126178 号公報
 特開平 4-29630 号公報

この先行技術文献調査結果の記録は、拒絶理由を構成するものではない。

本拒絶理由通知に関する質問や面接希望等については下記まで連絡されたい。

特許庁特許審査第2部 一般機械（制動・機械要素） 審査官 豊原邦雄
tel:03-3501-6909（一般機械直通） fax:03-3580-6904（共用）

Transmittal Number: 416,368
Date of Transmittal: December 2, 2003 (H15)

Notification of Reason(s) for Rejection

Patent Application Number: Japan Patent Application No. 2000-591343
Date of Drafting: November 18, 2003
Japan Patent Office Examiner: Kunio Toyohara
Representative for the Patent Applicant: Ms. Hisako Ishito (3 others)
Provisions Applied: Patent Law Section 29 (2) and Section 36

This application should be rejected for the following reasons. Any arguments relative to this notification must be submitted in writing within 3 months of the date of transmittal of this notification.

Reasons

1. The invention of this application, in the claims thereof indicated below, is an invention that could easily have been made, prior to the filing of the patent application, by a person with ordinary skill in the art to which the invention pertains, on the basis of inventions described in the publications indicated below, which were distributed in Japan or abroad prior to the filing of this application. For this reason, a patent shall not be granted for such an invention under Section 29 (2) of the Patent Law.

Note

(See the "List of Cited References" for the references cited below)

- Claims: 1, 3, 4, 10, 11, 12, 13, 15, 16
- Cited References: (a), (b), (c)
- Remarks

The reference (a) describes a disk brake that has plural pistons for each brake pad. In this invention, the crimping force of each piston is adjusted such that the pressure on the friction surface is generally uniform. The reference (b) describes a disk brake, in which two brake pads are provided in each caliper of the brake. The reference (c) describes a brake disk, which has a friction surface made of a metal/ceramic composite material.

This application describes that at least 15 % of the friction surface of the brake disk is covered with a lining of the brake pad. However, no description about the significance of this critical numerical value is provided in this application. Therefore, the amount of the surface covered with the lining should be described as a design item that can be properly selected by a person skilled in the art.

In the disk brake described in the reference (a), there would be no problem in the constitution in providing plural brake pads in the caliper of the disk brake as described in the reference (b) and then providing plural pistons to the respective pads. Also, there would be no problem in the constitution in using such brake disk as in the reference (c) with the above constitution.

2. This application, in the detailed description of the invention, does not comply with the requirements under Section 36 (4) of the Patent Law on the points stated below.

Remarks

- d. Since there is no specific description for the constitution of the “electronically compensating element”, it is unclear what the element is.
- e. A method for uniforming the pressure that works on the pad when the working friction coefficient is 0.40-0.45 is not described specifically.

Therefore, the detailed description of the invention of claims 5 and 6 is not written in such clear and full terms as to enable any person skilled in the art to make and use the invention.

3. The description in the claims of this application does not comply with the requirements under Section 36 (6)(i) of the Patent Law on the points stated below.

Remarks

- f. The pad having the ratio of $h:b=1:1-1:1.6$, which is described in claim 2, is different from the one described as “large in the radial direction but becomes relatively smaller in the peripheral direction” in the paragraph [0019], or from the ones shown in Figs. 2, 3 and 5.

Therefore, the invention of claim 2 is not identical with the one described in “the detailed description of the invention”.

4. The description in the claims of this application does not comply with the requirements under Section 36 (6)(ii) of the Patent Law on the points stated below.

Remarks

- g. The meaning of the description in claims 8 and 9, “the brake fluid pressure exceeds 1 $\mu\text{m}/\text{bar}$ ”, is unclear.
- h. In claim 1 and other portions, the interrelationship among the “crimping device”, “piston” and “caliper” is unclear.

Therefore, the invention of claims 1-16 is unclear.

At this point, there is no reason found to reject the invention of the claims other than the ones indicated in this notification. In a case that a reason for rejection is newly found, the reason for rejection shall be notified.

List of the Cited Reference(s)

- a. Microfilm of Japan Utility Model Application No. H2-48698 (Unexamined Japan Utility Model Publication No. H4-7739)
 - b. Microfilm of Japan Utility Model Application No. H1-106751 (Unexamined Japan Utility Model Publication No. H3-46026)
 - c. Unexamined Japan Patent Publication No. S62-124244 (A)
-

Record of the Prior Art Search Result

- Searched Technical Field: Int. Cl.⁷ F16D 65/02
DB name
- Prior Art References: Unexamined Japan Utility Model Publication No. S63-54572 (U)
Unexamined Japan Patent Publication No. H10-231870 (A)
Unexamined Japan Patent Publication No. S55-24270 (A)
Unexamined Japan Patent Publication No. H5-126178 (A)
Unexamined Japan Patent Publication No. H4-29630 (A)

This record does not constitute the reasons for refusal.

Any inquiry concerning this notification or a request for interview should be directed to the examiner at the following address:

Japan Patent Office, Second Patent Examination Department
General Machines (braking/machine elements)
Examiner: Kunio Toyohara
Tel: 03-3501-6909 (direct, General Machines)
Fax: 03-3580-6904 (common)